

REMARKS

Claims 2, 4, 6 and 8 have been canceled. Claims 1 and 9-11 have been amended. Claims 3, 5 and 7 remain in their original form.

Accordingly, claims 1, 3, 5, 7 and 9-11 remain for prosecution in the present case.

Rejections under 35 U.S.C. 112

Claim 1 was rejected under 35 U.S.C. 112, 1st paragraph, for an alleged lack of enablement. Claims 9-11 were rejected under 35 U.S.C. 112, 2nd paragraph, for being “indefinite.”

Claim 1 has been amended to recite the specific polyol component represented by the formula recited in claim 2, thereby obviating the rejection made under 35 U.S.C. 112, 1st paragraph.

Claims 10-11 have been amended to clarify that there are two separate resins.

Claim 9 has been amended to recite that the content of polyol component (A) in the ultraviolet-absorbing resin is not less than 10% by weight based on the ultraviolet-absorbing resin.

Accordingly, the rejections made under the provisions of 35 U.S.C. 112 should be withdrawn.

Katsuhiko et al. (JP 2002-187344)

Claims 1-11 were rejected under 35 U.S.C. 102(b) as being “anticipated” by “Katsuhiko et al” (Japanese Publication No. 2002-187344). This rejection is respectfully traversed. Reconsideration and withdrawal thereof are requested.

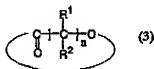
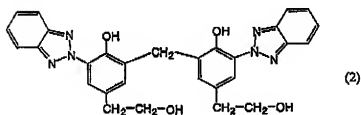
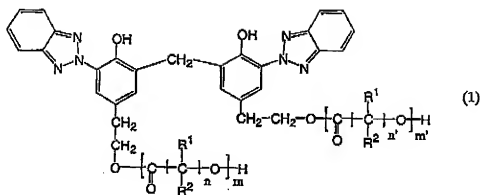
The Katsuhiko et al. '344 publication is not a prior art document in this case since the present application has a Japanese priority date of May 2, 2002, prior to the publication date of July 2, 2002 of the Katsuhiko '344 reference (the Katsuhiko reference was published in Japanese). If the Examiner so desires, the Applicant can provide an English translation of the priority document of the present application to evidence the priority date as well as the content of the basic application.

The Katsuhiko '344 reference discloses an aqueous resin emulsion which is similar to the presently claimed emulsion, except that the emulsion is applied to an ink-jet recording and the ultraviolet-absorbing polyol is a lactone-adduct.

The Katsuhiko '344 reference teaches a "recording resin composition for forming an ink accepting layer on a base material", as described on page 1 of the Patent Abstract thereof and further detailed in claims 1-3.

As the polyester polyol having the ultraviolet-absorption group (c) which is used for improving weather resistance (durability to ultraviolet rays) of the binder resin, the ring-opening addition polymerization of a lactone represented by the following Formula (3) to an alcohol represented by the following Formula (2) produces the compound containing an ultraviolet-absorbable group which is represented by the Formula (1).

Formulas (1), (2) and (3) are shown below:



(R¹ and R² represent groups as defined in the Katsuhiko '344 publication, wherein m, m', n and n' are integers.)

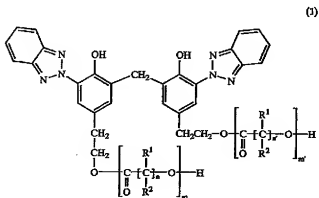
Inokami et al. (USP 2003/0144455 A1)

Claims 1-11 were rejected under 35 U.S.C. 102(e) as being "anticipated" by Inokami et al. (US Publication No. 2003/0144455 A1). This rejection is also respectfully traversed. Reconsideration and withdrawal thereof are requested.

The Inokami '455 publication discloses an aqueous emulsion, except for lactone-adducts of an ultraviolet-absorbing polyol, as set forth in claims 1-3 and 9-11.

According to the present invention, however, there is provided an ultraviolet-absorbing resin (1) obtained by reacting a polyester polyol (A) having an ultraviolet-absorbing group, a compound (C) containing an ionic and/or nonionic surface active group, an organic polyisocyanate (D) and, if necessary, a polyol (B), in the presence of an organic solvent(s) if necessary.

The cited reference does not teach or disclose a production method for the aqueous emulsion claimed in the present application, but instead discloses an ultraviolet-absorbing resin (i), wherein the polyester polyol (A) is represented by Formula (1):



Mori et al. (USP 5,922,882)

As pointed out by the Examiner, the Mori '882 reference discloses a bis-benzotriazolyphenol compound including 2,2'-methylenebis[6-(2H-benzotriazole-2-yl)-4-(2-hydroxyethyl)phenol]; see Col 3, lines 60-61 of the Mori '882 patent. The salient features of the invention described in the Mori '882 patent are set forth at Col. 2, line 54 through Col. 1, line 23 therein.

Comparison of Claimed Subject Matter With The References

None of the cited references discloses, teaches or suggests the incorporation of the specific polyol having an ultraviolet-absorbing group into urethane resins in the form of an aqueous emulsion, as claimed in the present application.

As mentioned above, Katsuhiko et al. '344 is not a prior art document for the present application because of its date.

Even if Katsuhiko et al. '344 would be considered as constituting effective prior art against the present application, the Katsuhiko '344 and Inokami '455 references fail to disclose or teach the aqueous emulsified urethane resin having a polyol component unit in which each of m and m' is (zero), i.e., a non-lactone adduct ultraviolet-absorbing compound. That is, the Katsuhiko and Inokami references both use the polyester polyol represented by Formula (1) as the polyol component.

To the contrary, although Mori et al. '882 discloses 2,2'-methylenebis[6-(2H-benzotriazole-2-yl)-4-(2-hydroxyethyl)phenol], this compound is not a polyester as is apparent from the fact that the compound does not include any ester bonds. Furthermore, the Mori reference is not directed to an aqueous emulsion. Therefore, it is not obvious and could not be

predicted by one skilled in the art to use 2,2'-methylenebis[6-(2H-benzotriazole-2-yl)-4-(2-hydroxyethyl)phenol for the preparation of an aqueous emulsion instead of the polyester polyol of the Katsuhiko and Inokami references.

According to the present invention, an aqueous urethane emulsion can be obtained without a lactone-adduct polyol component, although the Katsuhiko and Inokami references essentially use the lactone-adduct polyester (polyol component), and the Mori reference produces non-aqueous urethane polymers. Furthermore, since the Katsuhiko and Inokami references use a polyester, it is difficult to improve the hydrolysis resistance of the polyurethane. Particularly, since emulsions of these references are aqueous, the performance of the polyurethane deteriorates inevitably.

To the contrary, the present aqueous emulsion of the polyurethane improves the hydrolysis resistance even though the polyurethane is aqueous. Furthermore, since a lactone addition process is unnecessary, the aqueous emulsion can be produced economically by a shortened production process without deteriorating the performance of the polyurethane.

The Examiner states that the patentability of a product does not depend on its method of production.

However, in the instant case, the aqueous polyurethane (i.e., product) depends on the process since polyisocyanates are sensitive to various reactants including water as well as neutralizing agents having a carboxyl group and the like. Thus, the product (aqueous polyurethane emulsion) is inevitably defined by the process, if the product is precisely illustrated.

Conclusion

Considering the fact that the cited references do not teach, disclose or even suggest the presently claimed invention, it is respectfully submitted that the rejections over the prior art should be withdrawn and this case passed to issue. Favorable action is respectfully requested.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Raymond C. Stewart (Reg. No. 21,066) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

Dated: JUL 19 2007

Respectfully submitted,

By 

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